Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of claims:

1. (Original) A protection device coupled to a power source disposed in an electric power distribution system, the protection device being configured to protect a portion of the power distribution system from at least one fault condition, the device comprising:

line terminals configured to be coupled to the power source when a proper wiring condition is effected;

a receptacle member including receptacle openings configured to accommodate plug contact blades;

receptacle contacts disposed in the receptacle member and coupled to the line terminals, an electrical connection being established between the receptacle contacts and the line terminals;

at least one protective shutter movable between a closed position and an open position, the at least one protective shutter being disposed between at least one receptacle opening and the corresponding receptacle contact in the closed position to prevent the plug blades from making contact with the receptacle contacts; and

a mis-wiring sensor coupled to the line terminals, the mis-wiring sensor being configured to sense the proper wiring condition and actuate the protective shutter in response thereto, such that the protective shutter moves from the closed position to the open position, whereby the plug blades are permitted to make contact with the receptacle contacts upon insertion of the plug blades into the receptacle openings.

2. (Original) The device according to Claim I, further comprising feed-thru terminals configured to provide an electrical connection to a downstream receptacle, the at least one

protective shutter being in the closed position when the power source is connected to the feed-thru terminals instead of the line terminals.

3. (Original) The device according to Claim 1, further comprising:

a fault detector coupled to the line terminals, the fault detector being configured to detect the at least one fault condition; and

interrupting contacts disposed between the line terminals and the at least one receptacle, the interrupting contacts being configured to disconnect the power source from the at least one receptacle upon detection of the at least one fault condition.

4. (Original) The device according to Claim 3, wherein the at least one fault condition includes a ground fault condition.

5. (Original) The device according to Claim 3, wherein the at least one fault condition includes an arc fault condition.

6. (Original) The device according to Claim 3, further comprising feed-thru terminals configured to provide an electrical connection to a downstream receptacle, the interrupting contacts being disposed between the line terminals and the feed-thru terminals and configured to disconnect the source of power from the feed-thru terminals upon detection of the at least one fault condition.

7. (Original) The device according to claim 1, wherein the mis-wiring sensor includes at least one resistor.

8. (Original) The device according to claim l, further comprising:

a fault detection circuit configured to detect the at least one fault condition and provide a fault detect signal in response thereto;

interrupting contacts coupled to the fault detection circuit and disposed between the line terminals and the at least one receptacle, the interrupting contacts being

configured to disconnect the power source from the at least one receptacle in response to receiving the fault detect signal; and

a mis-wire circuit coupled to the fault detection circuit and including the mis-wiring sensor, the mis-wiring circuit causing the fault detection circuit to detect the at least one fault condition when an improper wiring condition is effected.

9. (Original) The device according to claim 8, wherein the mis-wiring sensor is configured to open the mis-wire circuit when the mis-wiring sensor senses the proper wiring condition.

10. (Original) The device according to claim 9, wherein the mis-wiring sensor includes at least one resistor.

11. (Original) The device according to claim 10, wherein the proper wiring condition causes an amount of current to flow in the at least one resistor for at least a predetermined duration, such that the mis-wire circuit is opened and the protective shutter is moved from the closed position to the open position.

12. (Original) The device according to claim 11, wherein the proper wiring condition causes a current to flow for at least a predetermined duration, such that the resistor heats to a temperature greater than the melting point of solder, such that the mis-wire circuit is opened and the protective shutter is moved from the closed position to the open position.

13. (Currently Amended) The device according to claim 8, wherein the fault detection circuit includes a [[GFCI]]ground fault circuit interrupter (GFCI) detection circuit.

14. (Currently Amended) The device according to claim 8, wherein the fault detection circuit includes an [[AFCI]]arc fault circuit interrupter (AFCI) detection circuit.

15. (Original) The device according to claim 1, further comprising:

a fault detection circuit disposed on a circuit board, the fault detection circuit being configured to detect the at least one fault condition and provide a fault detect

signal in response thereto, the mis-wiring sensor being disposed on the circuit board; and

interrupting contacts coupled to the fault detection circuit and disposed between the line terminals and the at least one receptacle, the interrupting contacts being configured to disconnect the power source from the at least one receptacle in response to receiving the fault detect signal.

16. (Original) The device according to claim 15, further comprising:

at least one pivot arm removably coupled to the at least one protective shutter in the closed position; and

a cam member coupled to the at least one pivot arm, the cam member being configured to rotate around an axis of rotation to thereby move the at least one pivot arm in a linear direction to thereby move the at least one protective shutter from the closed position to the open position.

17. (Original) The device according to claim 16, further comprising at least one spring member coupled to the at least one protection shutter, the at least one spring member being configured to decouple the at least one protective shutter from the at least one pivot arm when the at least one pivot arm moves in the linear direction.

18. (Original) The device according to claim 16, wherein the at least one pivot arm includes a first pivot arm and a second arm coupled to the cam member, the first pivot arm being removably coupled to a first protective shutter in a first receptacle closed position, and the second pivot arm being removably coupled to a second protective shutter in a second receptacle closed position.

19. (Original) The device according to claim 16, further comprising:

a rotor coupled to the cam member at a first end, and coupled to the circuit board at a second end; and

a torsion spring assembly coupled to the rotor and the mis-wiring sensor, the torsion spring assembly being configured to release stored mechanical energy when the mis-wiring sensor senses the proper wiring condition, such that the rotor

causes the cam member to rotate about the axis of rotation to thereby move the at least one pivot arm in the linear direction.

20. (Original) The device according to claim 19, wherein the mis-wiring sensor includes at least one resistor coupled to a portion of the torsion spring assembly by a solder connection.

21. (Original) The device according to claim 20, wherein the proper wiring condition causes a current to flow in the at least one resistor for at least a predetermined duration, such that the resistor heats to a temperature greater than the melting point of solder, such that the solder connection is broken, causing the torsion spring assembly to release the stored mechanical energy.

22. (Original) A protection device coupled to power source disposed in an electric power distribution system, the protection device being configured to protect a portion of the power distribution system from at least one fault condition, the device comprising:

line terminals configured to be coupled to the power source when a proper wiring condition is effected;

a receptacle member including receptacle openings configured to accommodate a plurality of plugs;

receptacle contacts coupled to the line terminals, an electrical connection being established between the receptacle contacts and the line terminals;

a plurality of protective shutters, each protective shutter being movable between a closed position and an open position, each protective shutter being disposed between at least one receptacle opening and corresponding receptacle contact in the closed position to prevent plug blades from making contact with the receptacle contacts;

a plurality of pivot arms, each pivot arm being removably coupled to a protective shutter in the closed position;

a cam member coupled to the plurality of pivot arms, the cam member being configured to rotate around an axis of rotation to thereby move each pivot arm in a linear direction to thereby move the protective shutter coupled thereto from the closed position to the open position; and

a mis-wiring sensor coupled to the line terminals and the cam member, the mis-wiring sensor being configured to sense the proper wiring condition and enable rotation of the cam member in response thereto.

23. (Original) The device according to claim 22, further comprising:

a rotor coupled to the cam member; and

a torsion spring assembly coupled to the rotor and the mis-wiring sensor, the torsion spring assembly being configured to release stored mechanical energy when the mis-wiring sensor senses the proper wiring condition, such that the rotor causes the cam member to rotate about the axis of rotation to thereby move the at least one pivot arm in the linear direction.

24. (Original) The device according to claim 23, wherein the mis-wiring sensor includes at least one resistor coupled to a portion of the torsion spring assembly by a solder connection.

25. (Original) The device according to claim 23, wherein the proper wiring condition causes an amount of current to flow in the at least one resistor for at least a predetermined duration, such that the resistor heats to a temperature greater than the melting point of solder, such that the solder connection is broken, whereby the torsion spring assembly releases the stored mechanical energy.